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**OPTIMIZING SOWING TIME AND ROW SPACING FOR PHACELIA TANACETIFOLIA  
 BENTH. IN BRAȘOV AREA**

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**Abstract:** This research was conducted to identify the most suitable sowing period and row spacing for the cultivation of *Phacelia tanacetifolia* Benth. under the specific environmental conditions of the Brașov area. The study focused on evaluating how climatic variability, sowing dates, and plant spacing influence vegetative development and seed productivity of phacelia, an annual melliferous species characterized by rapid growth and frequently used in organic farming systems as a green manure crop. Experimental observations demonstrated that the earliest sowing time ensured better crop development.



**Introduction**

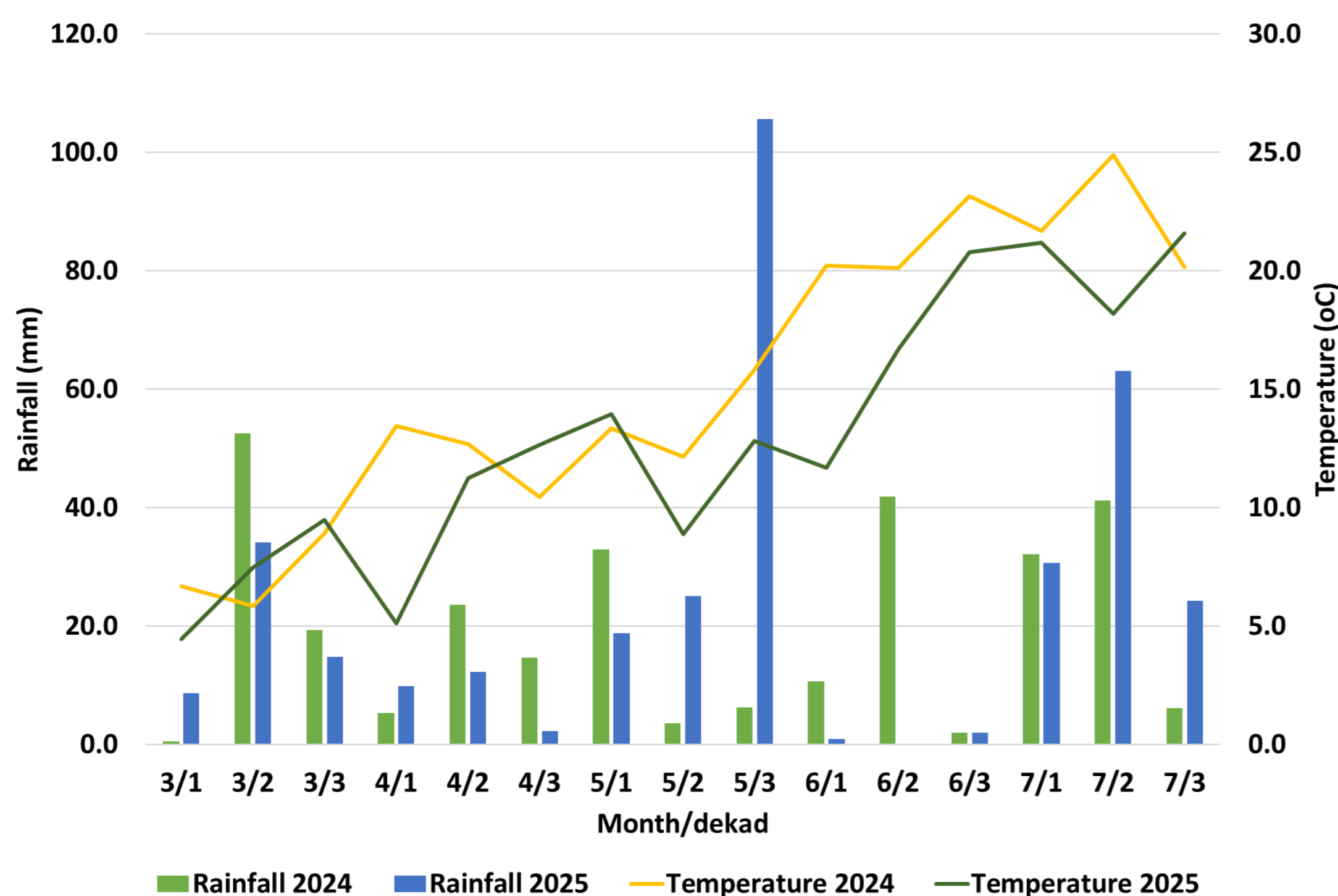
*Phacelia tanacetifolia* Benth is a fast-growing annual species widely used in agriculture for soil improvement, pollinator support, and as a cover crop. Its growth and productivity are influenced by agronomic practices, particularly sowing time and inter-row spacing. This study investigates the combined effects of sowing date and inter-row spacing on the growth dynamics and productivity of *Phacelia tanacetifolia*, with the objective of determining management practices that ensure optimal plant development under specific agro-climatic conditions.

**Material and method**

During the years 2024–2025, three different sowing periods (S I - early April, S II - mid-April, and S III - late April) and three different distances between plant rows (25 cm, 35 cm, and 50 cm) were tested for the cultivation of the species *Phacelia tanacetifolia* in the experimental field of INCDCSZ Brașov. Measurements were carried out regarding the seed yield harvested from the experimental variants and field replications.



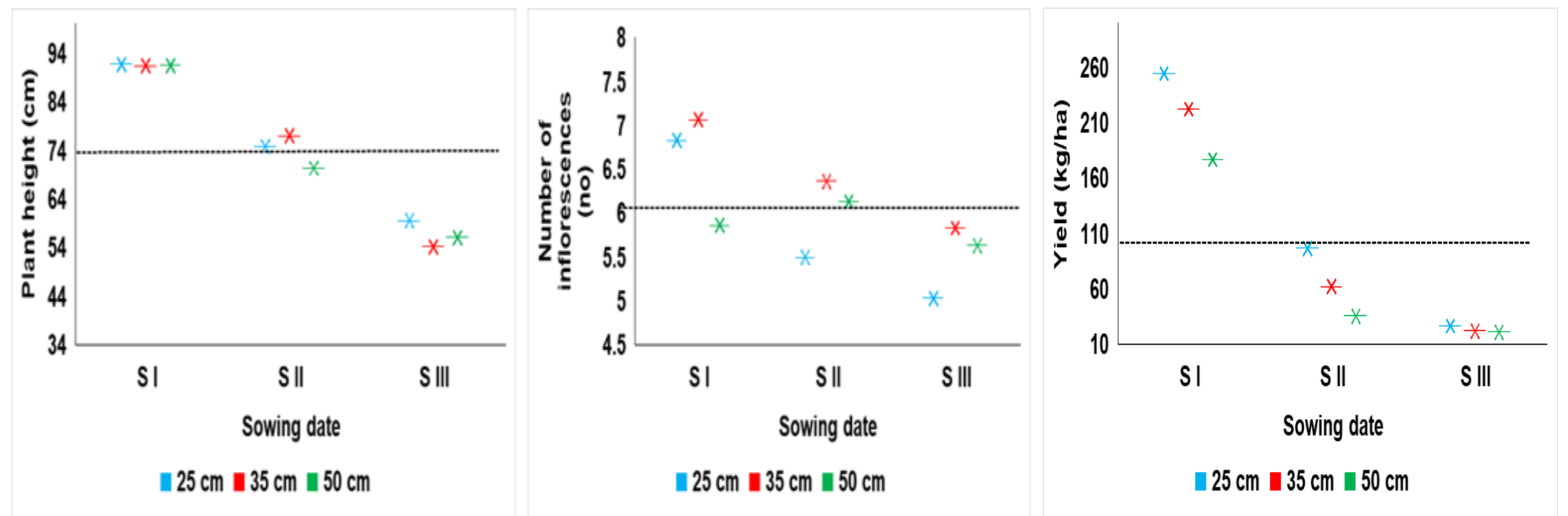
Climatic analysis highlighted notable differences between the two years. The 2024 season was marked by elevated air temperatures and a deficit of rainfall, conditions that limited plant growth and negatively affected production parameters. In contrast, meteorological conditions recorded in 2025 were more balanced, with more adequate precipitation levels and moderate temperatures, which supported improved plant performance.



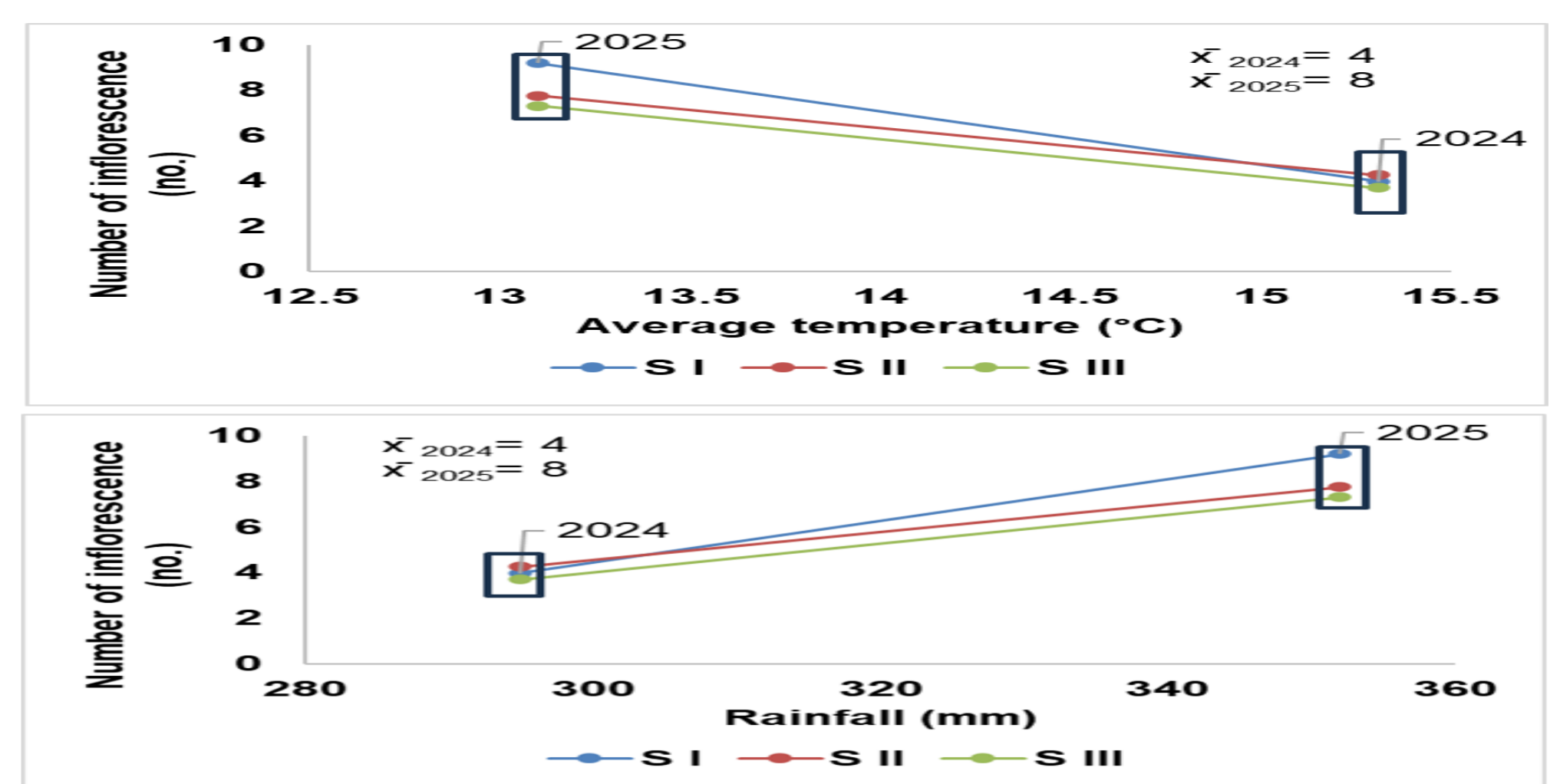
**Results and discussions**



Experimental observations demonstrated that the earliest sowing date ensured better crop development. Under these conditions, plant height frequently exceeded 94 cm, particularly at row spacing of 35 cm, which also favored the formation of a higher number of inflorescences. Considerable plant height values were observed at the same spacing when associated with the second sowing date.



The highest seed yield, reaching 254 kg/ha, was obtained when sowing was performed at the first date using a narrower row spacing of 25 cm. In 2024, the March–July period was marked by high temperatures and low precipitation, which led to the number of inflorescences per plant being reduced by half compared to 2025.



**Conclusions**

- ❖ Comparative analysis between the two experimental years indicated superior performance of all studied parameters in 2025 relative to 2024. Sufficient rainfall and moderate thermal regimes proved essential for maximizing the growth potential of this species.
- ❖ The first sowing time (S I) consistently resulted in more vigorous and uniform growth, with the tallest plants and highest number of inflorescences.
- ❖ The highest yield was achieved at a 25 cm spacing during the first sowing time.
- ❖ The experimental results underline the importance of carefully selecting both sowing time and row spacing in order to improve the agronomic efficiency and productive capacity of *Phacelia tanacetifolia* Benth. under local environmental conditions.

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